

Renumbered
claims
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Listing of Claims:

1. (original) An optical terminator for absorbing high power optical energy traveling in a fiber or waveguide, comprising:
 - a scattering core that receives the high power optical energy;
 - an absorbing layer at least partially surrounding the scattering core to absorb high power optical energy scattered by the scattering core; and
 - a thermal barrier between the scattering core and the surrounding absorbing layer.
2. (original) The optical terminator of claim 1 further including a heat sink for the absorbing layer.
3. (original) The optical terminator of claim 1 wherein the thermal barrier is an air barrier.
4. (original) The optical terminator of claim 1 wherein the absorbing layer absorbs optical energy of a broad spectrum of wavelengths.
5. (original) The optical terminator of claim 1 as presented in a connector configuration.
6. (original) The optical terminator of claim 1 as presented in a plug configuration.
7. (original) The optical terminator of claim 1 as presented in a bare fiber, in line connection configuration.
8. (original) The optical terminator of claim 1 as presented in a waveguide, in line connection configuration.
9. (original) The optical terminator of claim 1 as presented in an in line configuration with an angled splice connection.

10. (original) The optical terminator of claim 1 wherein the scattering core comprises a fiber fuse-type core.
11. (original) The optical terminator of claim 1 wherein the scattering core comprises a filled capillary-type core.
12. (original) The optical terminator of claim 1 wherein the scattering core comprises an enlarged-type core.
13. (original) The optical terminator of claim 1 as presented in an in line configuration with a tapered splice connection.
14. (original) The optical terminator of claim 1 wherein the scattering core comprises an enlarged-type core having an angled end.
15. (original) The optical terminator of claim 14 as presented in an in line configuration with an angled splice connection to the enlarged-type core.
16. (original) The optical terminator of claim 1 wherein the scattering core comprises an enlarged-type core with a conical shape.
17. (original) The optical terminator of claim 16 wherein the enlarged-type core with the conical shape is an extended fiber.
18. (original) The optical terminator of claim 1 wherein the absorbing layer includes an angled absorbing face.
19. (original) The optical terminator of claim 1 further including an axial distance adjustment mechanism for selectively choosing an axial distance relationship between the scattering core and the absorbing layer.
20. (original) A method for producing a scattering core, comprising:

emitting high-energy laser light into a large core fiber/waveguide;
flowing the emitted light into a narrowed fiber/waveguide to increase its power per unit area to a level above a fiber fuse threshold; and
impinging the increased power, emitted light on a contaminating deposition which initiates a fiber fuse backward effect along the narrowed fiber/waveguide to damage the narrowed fiber/waveguide through the production of bubbles along a core of the narrowed fiber/waveguide.

~~21. (number not used)~~

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~~22.~~ (original) The method of claim 20 wherein the foregoing steps are performed in situ with respect to the assembly of an optical terminator device.

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~~23.~~ (original) The method of claim 20 wherein the foregoing steps are performed as an external production method to assembly of an optical terminator device

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~~24.~~ (original) A method for producing a scattering core, comprising:
emitting high-energy laser light into a fiber/waveguide at a power per unit area level above a fiber fuse threshold;
impinging the emitted light on a contaminating deposition which initiates a fiber fuse backward effect along the fiber/waveguide to damage the narrowed fiber/waveguide through the production of bubbles along a core of the fiber/waveguide; and
reverse splitting energy from the fiber/waveguide to terminate the fiber fuse backward effect.

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~~25.~~ (original) The method of claim 24 wherein the foregoing steps are performed in situ with respect to the assembly of an optical terminator device.

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~~26.~~ (original) The method of claim 24 wherein the foregoing steps are performed as an external production method to assembly of an optical terminator device.

²⁶
~~27.~~ (original) A method for producing a scattering core, comprising:

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drawing a liquid, which shrinks in volume when solidified, into a capillary to substantially fill its inner volume; and

solidifying the liquid within the capillary to produce bubbles along the inner volume due to shrinkage in volume.

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28. (original) The method of claim ²⁶~~27~~ wherein the foregoing steps are performed in situ with respect to the assembly of an optical terminator device.

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29. (original) The method of claim ²⁶~~27~~ wherein the foregoing steps are performed as an external production method to assembly of an optical terminator device.

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30. (original) The method of claim ²⁶~~27~~ wherein the liquid is glass in liquid form at room temperature, and solidifying comprises heating the liquid within the capillary.

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31. (original) The method of claim ²⁶~~27~~ wherein the liquid is a polymer primer that when solidified within the capillary releases adsorbed gases to create the bubbles.

³¹
32. (original) An optical terminator, comprising:
a heat sink cap having an internal surface;
an optical absorbing layer on the internal surface of the heat sink cap;
a fiber having a scattering core and a transparent cladding, the fiber being positioned within the heat sink cap such that a thermal barrier is maintained between the optical absorbing layer and the cladding of the fiber.

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33. (original) The optical terminator of claim ³¹~~32~~ further including an axial distance adjustment mechanism for selectively choosing an axial distance relationship between the fiber and the optical absorbing layer.

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34. (original) The optical terminator of claim ³¹~~32~~ wherein the fiber includes a splice for in line connection to another fiber.

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~~35~~ (original) The optical terminator of claim ³³~~34~~ wherein the splice is an angled splice.

³⁵
~~36~~ (original) The optical terminator of claim ³³~~34~~ wherein the splice is positioned within the heat sink cap.

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~~37~~ (original) The optical terminator of claim ³³~~34~~ wherein the splice includes a funnel region.

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~~38~~ (original) The optical terminator of claim ³¹~~32~~ wherein the optical absorbing layer on a surface of the heat sink cap adjacent an end of the fiber is angled.

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~~39~~ (original) The optical terminator of claim ³¹~~32~~ wherein the fiber within the heat sink cap has a conical shape.

³⁹
~~40~~ (original) An optical terminator, comprising:
a heat sink cap having an internal surface;
an optical absorbing layer on the internal surface of the heat sink cap;
an enlarged scattering core positioned within the heat sink cap such that a thermal barrier is maintained between the optical absorbing layer and the enlarged scattering core.

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~~41~~ (original) The optical terminator of claim ³⁹~~40~~ further including an axial distance adjustment mechanism for selectively choosing an axial distance relationship between the enlarged scattering core and the optical absorbing layer.

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~~42~~ (original) The optical terminator of claim ³⁹~~40~~ wherein the enlarged scattering core includes a splice for in line connection to a fiber.

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~~43~~ (original) The optical terminator of claim ⁴¹~~42~~ wherein the splice is an angled splice.

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44. (original) The optical terminator of claim 42 wherein the splice is positioned within the heat sink cap.

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45. (original) The optical terminator of claim 40 wherein the enlarged scattering core includes an end adjacent to the heat sink cap which is angled.

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46. (original) The optical terminator of claim 40 wherein the optical absorbing layer on a surface of the heat sink cap adjacent an end of the enlarged scattering core is angled.

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47. (original) The optical terminator of claim 40 wherein the enlarged scattering core within the heat sink cap has a conical shape.

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48. (original) The optical terminator of claim 40 wherein the enlarged scattering core is made of Silica.

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49. (original) The optical terminator of claim 40 wherein only a portion of the enlarged scattering core is positioned within the heat sink cap.

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50. (original) An optical terminator, comprising:
a heat sink cap having an internal surface;
an optical absorbing layer on the internal surface of the heat sink cap;
a waveguide including a scattering core positioned within the heat sink cap such that a thermal barrier is maintained between the optical absorbing layer and the scattering core of the waveguide.

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51. (original) The optical terminator of claim 40 wherein the scattering core includes a splice for in line connection to another waveguide.